

CLEAN WATER DELIVERY

Village Power Conference Workshop

December 7, 2000

Charles Hanley

Sandia National Laboratories





Goals of this workshop

- Designed to address two-fold audience
 - Energy specialists who want a better understanding non-technical necessities for successful projects
 - Development specialists who want to learn more about available technologies
- Provide overviews of successful systematic approaches
 - Clean water delivery and sanitation
 - Incorporation of technology, economics, social, infrastructural requirements
- Initiate a forum for continued discussion
 - Interchange of ideas, concepts among experts in water delivery, sanitation, rural development, and energy





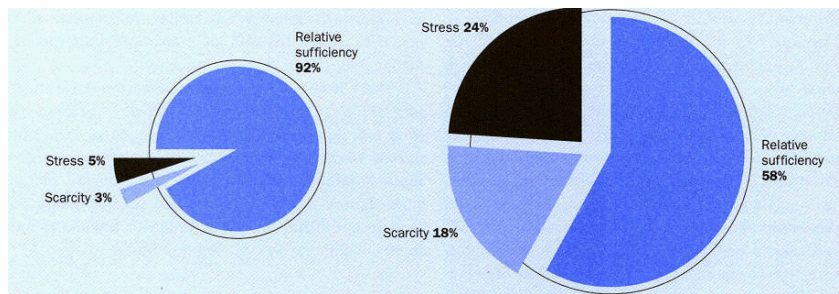
Clean water access is an ever-growing problem

- More than 1.5 billion people globally lack access to safe drinking water
- More than 2 billion lack adequate sanitation
- Diarrheal disease is leading cause of death for children in developing countries
- Uneven distribution between fresh water and population
 - Most fresh water is in industrial countries - 20% of world's population
 - Projected world population growth of 3 billion by 2025 is in developing countries with already scarce fresh water
- Growing implications for regional peace, food security, growth of cities, and location of industries





Water Scarcity An Emerging Problem

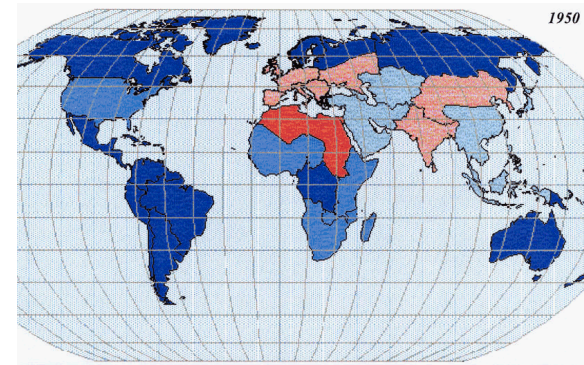


1995

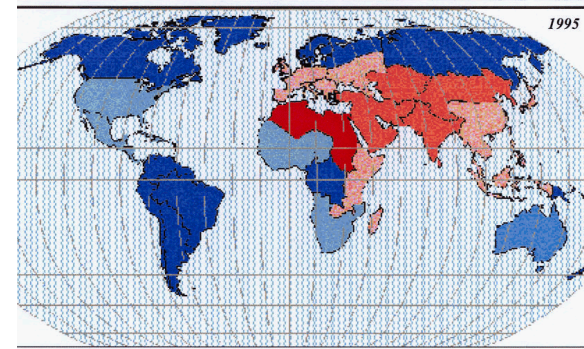
2050

ACG

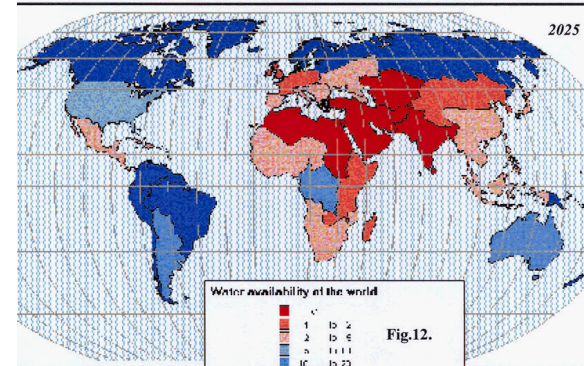
Advanced Concepts Group



1950



1995



2025

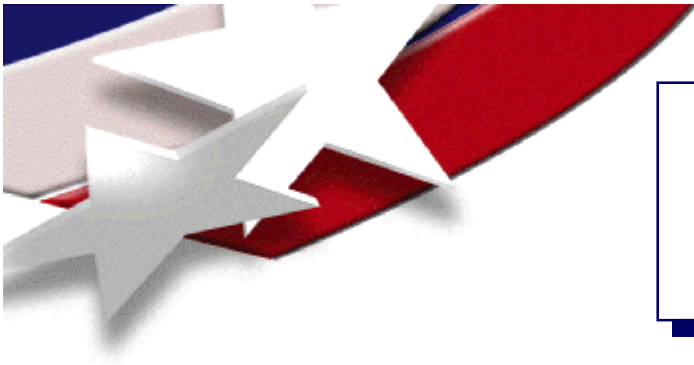




Useful Web Sites

- World Bank
 - Water and Sanitation Program: www.wsp.org/
 - Water Help Desk: www.worldbank.org/html/fpd/water/
- USAID Environmental Health Project: www.ehproject.org/
- World Health Organization
 - Water, Sanitation, and Health: www.who.int/water_sanitation_health/
 - O&M Working Group: www.who.int/water_sanitation_health/wss/o_m.html
- Pan-American Health Organization: www.paho.org/
 - CEPIS (Pan-American Center for Sanitation Engineering and Environmental Sciences): www.cepis.ops-oms.org/
- Watermark: www.lboro.ac.uk/wedc/watermark/
- *Several of these have many valuable links*





Workshop agenda

15 min Introduction and Overview

Charles Hanley, Sandia
National Laboratories

Overviews of Integrated Approaches:

40 min UNDP/World Bank Water and Sanitation Program

Param Iyer, World Bank

40 min An Historical Perspective of USAID Water and
Sanitation for Health (WASH) and Environmental
Health Projects,"

Morris Israel, U.S. Agency for
International Development

40 min Related Technologies: Water Pumping and
Purification

Robert Foster, New Mexico
State University

15 min *Break*

Case Studies - Putting the Tools into Practice:

15 min PV Pumping for Community Water in Mauritania

François Münger, World Bank

15 min Delivering Sustainable Water Treatment Systems to
Peri-Urban and Rural Mexico

Elwyn Ewald, Chairman,
WaterHealth International, Inc.

15 min PV Community Water Delivery in the Dominican
Republic and Honduras

André Verani, Enersol

15 min Community Rope Pumps in Nicaragua; A Private
Sector Approach

Henk Alberts, Bomba de
Mecate, S.A.

15 min Challenges of Rural Marketing – The IDE
Experience

Deborah Boldt, IDE

15 min Closing Discussion

